

U.S. ARMY RESEARCH OFFICE

BROAD AGENCY ANNOUNCEMENT

DAAD19-02-R-0005



Experimental and Theoretical
Development of Quantum Computers

MAY 2002

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QUANTUM COMPUTERS

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I. Introduction

The U.S. Army Research Office (ARO) solicits proposals for experimental and theoretical studies relating to the possible physical realization of quantum computers and for effective computation on quantum computers.

II. Background

The proposals being sought are in two categories related to quantum computing. “Quantum Computing” proposals are specifically for both experimental and theoretical studies of potential physical embodiments of quantum logic and for more basic (usually, but not necessarily, theoretical) studies in the related fields of quantum error correction and control, quantum decoherence and entanglement. “Quantum Algorithm” proposals primarily should develop new quantum computing algorithms but may also consider issues of quantum computational complexity and computability.

Quantum Computing Proposals

The experimental implementation studies must develop proof-of-concept demonstrations. A minimum objective is the demonstration, at the conclusion of a three-year project, of several entangling operations on at least three qubits. Proposals of this type should specify the qubits, the physical properties and operations to be used, and the mechanisms for switching interactions on and off. They should specify how entanglement will be created, stored, and verified. Effective proposals will also include preliminary feasibility calculations and estimates of parameters such as decoherence times and achievable operational accuracy and speed. Proposals should provide a schedule of measurable milestones that demonstrate the removal of key experimental and theoretical barriers to the advancement of quantum computing science and technology. Preference will be given to approaches that have a clear potential for large scalability within the framework of existing or emerging technologies. If the proposed system is not based on any of the conventional models of quantum computing, the proposal should explain why it is expected to have comparable computational strength.

Proposals for theoretical and other basic studies should be smaller in scope, but like the larger experimental qubit implementation proposals described above, should make very clear how the proposed work will enhance our understanding of quantum computation and, therefore, facilitate the eventual development of practical quantum computers. All proposals should provide a schedule of measurable milestones that demonstrate the removal of key experimental and/or theoretical barriers.

Quantum Algorithm Proposals

Proposals for research in quantum algorithms should be to devise specific quantum algorithms to solve mathematically and computationally hard problems from such diverse fields as algebra, number theory, geometry, analysis, optimization, graph theory, differential equations, combinatorics, topology, and logic. Also of interest are physically inspired problems that provide new insight into quantum algorithms and computation for mathematics. Quantum algorithms that are developed should focus on constructive

solutions for specific tasks and on general methodologies for expressing and analyzing algorithms tailored to specific problems. Complexity analyses such as upper and lower bounds on algorithms relative to specific models of quantum computation are also encouraged.

III. General Information

Through this competition, the ARO expects to make several awards for one to three-year performance periods, subject to the availability of appropriations. Awards may be made as contracts or grants. Multi-year projects must have clear goals for each year. Funding for subsequent years will be contingent upon satisfactory performance and the availability of funds.

Department of Defense (DoD) CENTRAL CONTRACTOR REGISTRATION (CCR) DATABASE: Prospective contractors/grantees must be registered in the CCR database prior to award of an agreement. By submission of an offer resulting from this Broad Agency Announcement (BAA), the offeror acknowledges the requirement that a prospective contractor/grantee must be registered in the CCR database prior to award, during performance, and through final payment of any agreement resulting from this BAA.

IV. Conditions

A. Eligibility

The competition is specifically for experimental and theoretical development of quantum computers as described in Section II. Potential offerors are advised to read this announcement carefully. It explains the agencies' research needs upon which the topic is based and the terms and conditions of the competition.

Proposals may be submitted by degree-granting universities, nonprofit organizations, or industrial concerns. Proposals are encouraged from Historically Black Colleges and Universities (as determined by the Secretary of Education to meet requirements of 34 CFR Section 608.2) and from Minority Institutions, defined as institutions meeting criteria contained in 10 U.S.C. 2323(a)(1)(C) which reads: "minority institutions (as defined in section 1046(3) of the Higher Education Act of 1965 (20 U.S.C. 1135d-5(3)), which, for the purposes of this section, shall include Hispanic-serving institutions (as defined in section 316(b)(1) of such Act (20 U.S.C. 1059c(b)(1))."

Federal laboratories, Federally Funded Research and Development Centers, and academic institutions that are federal government organizations (e.g., Naval Postgraduate School) may participate, but they may not receive funds awarded through this competition.

This is to notify potential offerors that each grant awarded under this announcement to an institution of higher education shall include the following term and condition:

“As a condition for receipt of funds available to the Department of Defense, DoD, under this award, the recipient agrees that it is not an institution of higher education (as defined in 32 Code of Federal Regulations (CFR) Part 216) that has a policy of denying, and that it is not an institution of higher education that effectively prevents, the Secretary of Defense from obtaining for military recruiting purposes: (A) entry to campuses or access to students on campuses; or (B) access to directory information pertaining to students. If the recipient is determined, using procedures in 32 CFR Part 216 to be such an institution of higher education during the period of performance of this agreement, and therefore to be in breach of this clause, the Government will cease all payments of DoD funds under this agreement and all other DoD grants and cooperative agreements, and it may suspend or terminate such grants and agreements unilaterally for material failure to comply with the terms and conditions of award.” (32 CFR Part 216 may be accessed electronically at <http://www.access.gpo.gov/nara/cfr/>.)

If your institution has been identified under the procedures established by the Secretary of Defense to implement Section 558 of Public Law 103-337, then: (1) no funds available to DoD may be provided to your institution through any grant, including any existing grant; (2) as a matter of policy, this restriction also applies to any cooperative agreement; and (3) your institution is not eligible to receive a grant or cooperative agreement in response to this solicitation.

This is to notify potential offerors that each contract awarded under this announcement to an institution of higher education shall include the clause: Defense Federal Acquisition Regulation Supplement (DFARS) 252.209-7005, Reserve Officer Training Corps and Military Recruiting on Campus.

Technical point of contact for this Broad Agency Announcement is Dr. Henry O. Everitt, Physics Division, (919) 549-4369, email: everitt@aro.arl.army.mil. Questions regarding the administrative content of this Broad Agency Announcement may be addressed to ARO at (919) 549-4375.

B. White Paper Submission and Content

Informal white papers no more than ten pages in length outlining the proposed project, a summary of investigator qualifications, and a budget estimate must be received by 4:00 PM Eastern Daylight Savings Time, Monday, July 1, 2002. White papers are not required prior to proposal submission but are strongly encouraged.

White papers must be transmitted to the following e-mail address: wolfec@aro.arl.army.mil. The e-mail subject line should contain the following: DAAD19-02-R-0005 White Paper.

White papers should loosely follow the format described for the full proposal. White papers must be submitted in a single PDF formatted file with a font and pitch of Times New Roman 10, double spaced. Each white paper shall contain a single title page

containing an executive summary, a single budget page outlining expected expenditures and justifications, and a single page containing curriculum vitae sketches. This leaves a maximum of seven pages for the technical portion of the white paper, including all references and figures. Proposers must specify whether a white paper is to be considered a “Quantum Computing” white paper or a “Quantum Algorithm” white paper.

Feedback on the white papers will be e-mailed directly to the proposed Principal Investigators on or about the week of August 5, 2002. It is possible that a proposer will be asked to submit a proposal in response to this solicitation to an agency other than ARO. Such guidance will be provided in the feedback e-mailed to the Principal Investigators.

C. Proposal Submission

To be eligible for consideration, approved and completed proposals containing all information specified in Proposal Content below must be submitted electronically. In addition, the signed Proposal Cover Page (ARO Form 51) must be submitted electronically or in hard copy.

The electronic proposal and signed Proposal Cover Page (ARO Form 51) must be received at the Army Research Office by 4:00 PM Eastern Daylight Savings Time on Tuesday, October 8, 2002.

Electronic proposals must be transmitted to the following e-mail address: baa@aro.arl.army.mil. Proposals must be submitted in a single PDF formatted file with a font and pitch of Times New Roman 10. The e-mail subject line should contain the following: DAAD19-02-R-0005 Proposal. Proposers must specify whether a proposal is to be considered a “Quantum Computing” proposal or a “Quantum Algorithm” proposal.

The proposal must contain three electronic forms: (1) ARO Form 51, Proposal Cover Page; (2) ARO Form 99, Summary Proposal Budget; and (3) ARO Current and Pending Support (unnumbered form). See Proposal Content below. These forms may be accessed electronically at <http://www.aro.army.mil/forms/forms2.htm>. The MS Word documents may be saved to a working directory on your computer and opened and filled in using the Windows software application.

The signed Proposal Cover Page (ARO Form 51) may be submitted as a PDF electronic file, included with the electronically submitted proposal, or may be forwarded to one of the following addresses:

If the Proposal Cover Page is sent through the U.S. Postal Service, use this address:

U.S. Army Research Office
ATTN: AMSRL-RO-S (02-R-0005)
P.O. Box 12211
Research Triangle Park, NC 27709-2211

If the Proposal Cover Page is hand carried or sent by commercial carrier, use this address:

U.S. Army Research Office
ATTN: AMSRL-RO-S (02-R-0005)
4300 South Miami Boulevard
Durham, NC 27703-9142

A proposal will not be processed until the complete proposal (including signed Proposal Cover Page) has been received by the Army Research Office.

If you have questions concerning electronic proposal submission, please contact the Army Research Office at (919) 549-4219. Proposals submitted by facsimile will not be accepted.

Proposals received after the deadline will be handled in accordance with the provisions detailed in Appendix A.

Acknowledgment of receipt of a proposal under this solicitation will be accomplished via e-mail to the addressee submitting the proposal.

Letters to selectees announcing award decisions will be mailed or e-mailed by ARO on or about November 18, 2002. Unsuccessful offerors will be notified shortly thereafter.

D. Proposal Content

The Department of Defense is concerned with research in critical areas of science and engineering, with science and engineering education, and with the availability of equipment required to meet research objectives. For this reason, proposals must adequately describe the technical objectives and approaches, support of any students, and expenditures for equipment, all of which will be evaluated by scientific reviewers in accordance with the Evaluation Criteria and Selection Process.

Proposals should include:

- (1) Cover page: To be eligible for review, proposals must have ARO Form 51 as a cover page (See Proposal Submission above).
- (2) Abstract: The offeror must provide an abstract no longer than one page. Proposers must specify whether a proposal is to be considered a “Quantum Computing” proposal or a “Quantum Algorithm” proposal. This should be clearly specified in the space between the proposal title and abstract.
- (3) Text: The technical portion of the proposal should be typed, double-spaced. This section of the proposal is limited to 30 pages and should:

(a) Adopt the following format: introduce the problem to be addressed, survey related work, identify key obstacles, outline the proposed solution and well-defined objective, detail the three year research plan with milestones, analyze the impact if successful, identify the investigators and resources, and state the budget requirements. Include appropriate literature citations.

(b) Describe the facilities available for accomplishment of research objective. Describe the equipment planned for acquisition under this program and its application to objective. When possible, equipment should be purchased very early in the research award period.

(c) Describe plans for the research training of students in science and/or engineering.

(d) Describe in detail proposed sub-awards or relevant collaborations (planned or in place) with industry, government organizations, or other appropriate institutions. Particularly describe how collaborations are expected to facilitate the transition of research results to application. If sub-awards are proposed, make clear the division of research activities and provide detailed budgets for the proposed sub-awards.

(e) Identify other parties to whom the proposal has been/will be sent.

(4) Personnel: Describe the qualifications of the principal investigator and other key researchers involved in the project. Include curriculum vitae. For all proposals, one individual should be the designated principal investigator for purposes of technical responsibility and contact.

(5) Cost: The financial portion of the proposal should contain cost estimates sufficiently detailed for meaningful evaluation, including cost details for proposed sub-awards. Use ARO Form 99, Summary Proposal Budget, to submit budget data (See Proposal Submission above). For budget purposes, use an award start date of February 1, 2003. The budget must include the total cost of the project, as well as a breakdown of the amount(s) by source(s) of funding (e.g., funds requested under this BAA, non-federal funds to be provided as cost sharing). The cost proposal is not considered part of the page count.

Budgeted cost elements should reflect the following:

(a) Time being charged to the project, for whom (principal investigator, graduate students, etc.), and the commensurate salaries and benefits. Allowable charges for graduate students include salary, appropriate research costs, and tuition. Allowable charges for undergraduate students include salary and research training costs, but not tuition;

(b) Cost of equipment, based on most recent quotations and broken down in sufficient detail for evaluation. Equipment costs should be budgeted primarily during the first year;

(c) Travel costs and time, and the relevance to stated objectives. All proposals should include costs for one or two investigators to attend a five-day annual program review meeting in the Washington, DC/Baltimore, MD area;

(d) Estimate of material and operating costs;

(e) Publication and report costs;

(f) Consultant fees (indicating daily or hourly rate) and travel expenses and the nature and relevance of such costs;

(g) Computer services;

(h) Sub-award costs and type (the portion of work to be sub-awarded and rationale);

(i) Communications costs not included in overhead;

(j) Other direct costs;

(k) Indirect costs.

(6) Statement of Current and Pending Support: A statement of current and pending support must be included for each investigator listed in the proposal. Use the ARO Current and Pending Support form to submit this information (See Proposal Submission above). This statement requires that each investigator specify all grants and contracts through which he or she is currently receiving or may potentially receive financial support.

E. Length and Format of Proposals

Each proposal must be no longer than 40 pages, inclusive of vitae and cover, but exclusive of budget and statement of current and pending support. A page is defined as 8 1/2 x 11 inch paper, single-sided, with one-inch margins and a font and pitch of Times New Roman 10. All pages should be numbered consecutively, beginning with the first page after the proposal cover page. The Proposal Cover Page, ARO Form 51, is included in the page count. The budget and statement of current and pending support are not included in the page count. The technical portion must be typed, double-spaced, and should not exceed 30 pages. Proposals shorter than 40 pages are heartily encouraged. Separate attachments, such as institutional brochures or reprints, cannot be considered.

V. Evaluation Criteria and Selection Process

The selection process will be conducted based upon a technical peer review as described in Federal Acquisition Regulation Subparts 6.102(d)(2) and 35.016. Evaluation and selection will be based primarily on the following criteria, both of equal weight:

1. Scientific and technical merits of the proposed research; and

2. Potential contribution of the research to quantum computing and defense missions.

Other evaluation criteria, of lesser importance, but weighted equal to each other are:

3. Experience and qualifications of the principal investigator, other key research personnel, and the institution sponsoring the proposal; and
4. The realism and reasonableness of cost.

VI. Awards

A. A total of at least \$3.0M per year is available under this solicitation, at least \$2.0M of which is available for quantum computing proposals and at least \$0.5M of which is available for quantum algorithm proposals. Proposers must specify whether a proposal is to be considered a “Quantum Computing” proposal or a “Quantum Algorithm” proposal. Multiple, one to three-year awards are anticipated. Most theoretical and quantum algorithm proposals will request less than \$250K per year, while most coupled experimental and theoretical proposals will request less than \$600K per year.

B. Reporting requirements for both contracts and grants will be as described in ARO Form 18 located at <http://www.aro.army.mil/forms/forms2.htm>.

VII. Certifications

A. Certifications Required for Assistance Awards (Grants or Cooperative Agreements)

1. Certification at Appendix A to 32 CFR Part 28 Regarding Lobbying

By signing and submitting a proposal that may result in the award of a grant or cooperative agreement exceeding \$100,000, the prospective awardee is certifying, to the best of his or her knowledge and belief, that:

(a) No Federal appropriated funds have been paid or will be paid, by or on behalf of the undersigned, to any person for influencing or attempting to influence an officer or employee of an agency, a Member of Congress, an officer or employee of Congress, or an employee of a Member of Congress in connection with the awarding of any Federal contract, the making of any Federal grant, the making of any Federal loan, the entering into of any cooperative agreement, and the extension, continuation, renewal, amendment, or modification of any Federal contract, grant, loan, or cooperative agreement.

(b) If any funds other than Federal appropriated funds have been paid or will be paid to any person for influencing or attempting to influence an officer or employee of any agency, a Member of Congress, an officer or employee of Congress, or an employee of a Member of Congress in connection with this Federal contract, grant, loan, or cooperative agreement, the undersigned shall complete and submit Standard Form-LLL, “Disclosure Form to Report Lobbying,” in accordance with its instructions.

(c) The undersigned shall require that the language of this certification be included in the award documents for all subawards at all tiers (including subcontracts, subgrants, and contracts under grants, loans, and cooperative agreements) and that all subrecipients shall certify and disclose accordingly.

This certification is a material representation of fact upon which reliance was placed when this transaction was made or entered into. Submission of this certification is a prerequisite for making or entering into this transaction imposed by section 1352, title 31, U.S. Code. Any person who fails to file the required certification shall be subject to a civil penalty of not less than \$10,000 and not more than \$100,000 for each such failure.

2. Certification at Appendix A to 32 CFR Part 25 Regarding Debarment, Suspension, and Other Responsibility Matters --Primary Covered Transactions

(1) By signing and submitting this proposal, the prospective primary participant is providing the certification set out below.

(2) The inability of a person to provide the certification required below will not necessarily result in denial of participation in this covered transaction. The prospective participant shall submit an explanation of why it cannot provide the certification set out below. The certification or explanation will be considered in connection with the department or agency's determination whether to enter into this transaction. However, failure of the prospective primary participant to furnish a certification or an explanation shall disqualify such person from participation in this transaction.

(3) The certification in this clause is a material representation of fact upon which reliance was placed when the department or agency determined to enter into this transaction. If it is later determined that the prospective primary participant knowingly rendered an erroneous certification, in addition to other remedies available to the Federal Government, the department or agency may terminate this transaction for cause or default.

(4) The prospective primary participant shall provide immediate written notice to the department or agency to which this proposal is submitted if at any time the prospective primary participant learns that its certification was erroneous when submitted or has become erroneous by reason of changed circumstances.

(5) The terms "covered transaction," "debarred," "suspended," "ineligible," "lower tier covered transaction," "participant," "person," "primary covered transaction," "principal," "proposal," and "voluntarily excluded," as used in this clause, have the meanings set out in the Definitions and Coverage sections of the rules implementing Executive order 12549. You may contact the department or agency to which this proposal is being submitted for assistance in obtaining a copy of those regulations.

(6) The prospective primary participant agrees by submitting this proposal that, should the proposed covered transaction be entered into, it shall not knowingly enter into any

lower tier covered transaction with a person who is proposed for debarment under 48 CFR part 9, subpart 9.4, debarred, suspended, declared ineligible, or voluntarily excluded from participation in this covered transaction, unless authorized by the department or agency entering into this transaction.

(7) The prospective primary participant further agrees by submitting this proposal that it will include the clause titled "Certification Regarding Debarment, Suspension, Ineligibility and Voluntary Exclusion--Lower Tier Covered Transaction," provided by the department or agency entering into this covered transaction, without modification, in all lower tier covered transactions and in all solicitations for lower tier covered transactions.

(8) A participant in a covered transaction may rely upon a certification of a prospective participant in a lower tier covered transaction that it is not proposed for debarment under 48 CFR part 9, subpart 9.4, debarred, suspended, ineligible, or voluntarily excluded from the covered transaction, unless it knows that the certification is erroneous. A participant may decide the method and frequency by which it determines the eligibility of its principals. Each participant may, but is not required to, check the List of Parties excluded from Federal Procurement and Nonprocurement Programs.

(9) Nothing contained in the foregoing shall be construed to require establishment of a system or records in order to render in good faith the certification required by this clause. The knowledge and information of a participant is not required to exceed that which is normally possessed by a prudent person in the ordinary course of business dealings.

(10) Except for transactions authorized under paragraph 6 of these instructions, if a participant in a covered transaction knowingly enters into a lower tier covered transaction with a person who is proposed for debarment under 48 CFR part 9, subpart 9.4, suspended, debarred, ineligible, or voluntarily excluded from participation in this transaction, in addition to other remedies available to the Federal Government, the department or agency may terminate this transaction for cause or default.

Certification Regarding Debarment, Suspension, and Other Responsibility Matters--Primary Covered Transactions

The prospective primary participant certifies to the best of its knowledge and belief, that it and its principals:

(a) Are not presently debarred, suspended, proposed for debarment, declared ineligible, or voluntarily excluded by any Federal department or agency;

(b) Have not within a three-year period preceding this proposal been convicted of or had a civil judgment rendered against them for commission of fraud or a criminal offense in connection with obtaining, attempting to obtain, or performing a public (Federal, State or local) transaction or contract under a public transaction; violation of Federal or State antitrust statutes or commission of embezzlement, theft, forgery, bribery, falsification or destruction of records, making false statements, or receiving stolen property;

(c) Are not presently indicted for or otherwise criminally or civilly charged by a government entity (Federal, State or local) with commission of any of the offenses enumerated in paragraph (1)(b) of this certification; and

(d) Have not within a three-year period preceding this application/proposal had one or more public transactions (Federal, State or local) terminated for cause or default.

Where the prospective primary participant is unable to certify to any of the statements in this certification such prospective participant shall attach an explanation to this proposal.

3. Certification at Appendix C to 32 CFR Part 25 Regarding Drug-Free Workplace Requirements

(1) By signing and/or submitting this application or grant agreement, the grantee is providing the certification set out below.

(2) The certification set out below is a material representation of fact upon which reliance is placed when the agency awards the grant. If it is later determined that the grantee knowingly rendered a false certification, or otherwise violates the requirements of the Drug-Free Workplace Act, the agency, in addition to any other remedies available to the Federal Government, may take action authorized under the Drug-Free Workplace Act.

(3) For grantees other than individuals, Alternate I applies.

(4) For grantees who are individuals, Alternate II applies.

(5) Workplaces under grants, for grantees other than individuals, need not be identified on the certification. If known, they may be identified in the grant application. If the grantee does not identify the workplaces at the time of application, or upon award, if there is no application, the grantee must keep the identity of the workplace(s) on file in its office and make the information available for Federal inspection. Failure to identify all known workplaces constitutes a violation of the grantee's drug-free workplace requirements.

(6) Workplace identifications must include the actual address of buildings (or parts of buildings) or other sites where work under the grant takes place. Categorical descriptions may be used (e.g., all vehicles of a mass transit authority or State highway department while in operation, State employees in each local unemployment office, performers in concert halls or radio studios).

(7) If the workplace identified to the agency changes during the performance of the grant, the grantee shall inform the agency of the change(s), if it previously identified the workplaces in question (see paragraph five).

(8) Definitions of terms in the Nonprocurement Suspension and Debarment common rule and Drug-Free Workplace common rule apply to this certification. Grantees' attention is called, in particular, to the following definitions from these rules;

Controlled substance means a controlled substance in schedules I through V of the Controlled Substances Act (21 U.S.C. 812), and as further defined by regulation (21 CFR 1308.11 through 1308.15);

Conviction means a finding of guilt (including a plea of nolo contendere) or imposition of sentence, or both, by any judicial body charged with the responsibility to determine violations of the Federal or State criminal drug statutes;

Criminal drug statute means a Federal or non-Federal criminal statute involving the manufacture, distribution, dispensing, use, or possession of any controlled substance;

Employee means the employee of a grantee directly engaged in the performance of work under a grant, including: (i) All "direct charge" employees; (ii) all "indirect charge" employees unless their impact or involvement is insignificant to the performance of the grant; and, (iii) temporary personnel and consultants who are directly engaged in the performance of work under the grant and who are on the grantee's payroll. This definition does not include workers not on the payroll of the grantee (e.g., volunteers, even if used to meet a matching requirement; consultants or independent contractors not on the grantee's payroll; or employees of subrecipients or subcontractors in covered workplaces).

Certification Regarding Drug-Free Workplace Requirements (Alternate I - Grantees Other Than Individuals)

The grantee certifies that it will or will continue to provide a drug-free workplace by:

(a) Publishing a statement notifying employees that the unlawful manufacture, distribution, dispensing, possession, or use of a controlled substance is prohibited in the grantee's workplace and specifying the actions that will be taken against employees for violation of such prohibition;

(b) Establishing an ongoing drug-free awareness program to inform employees about--

(1) The dangers of drug abuse in the workplace;

(2) The grantee's policy of maintaining a drug-free workplace;

(3) Any available drug counseling, rehabilitation, and employee assistance programs;
and

(4) The penalties that may be imposed upon employees for drug abuse violations occurring in the workplace.

(c) Making it a requirement that each employee to be engaged in the performance of the grant be given a copy of the statement required by paragraph (a);

(d) Notifying the employee in the statement required by paragraph (a) that, as a condition of employment under the grant, the employee will--

(1) Abide by the terms of the statement; and

(2) Notify the employer in writing of his or her conviction for a violation of a criminal drug statute occurring in the workplace no later than five calendar days after such conviction;

(e) Notifying the agency in writing, within ten calendar days after receiving notice under paragraph (d)(2) from an employee or otherwise receiving actual notice of such conviction. Employers of convicted employees must provide notice, including position title, to every grants officer or other designee on whose grant activity the convicted employee was working, unless the Federal agency has designated a central point for the receipt of such notices. Notice shall include the identification number(s) of each affected grant;

(f) Taking one of the following actions, within 30 calendar days of receiving notice under paragraph (d)(2), with respect to any employee who is so convicted--

(1) Taking appropriate personnel action against such employee, up to and including termination, consistent with the requirements of the Rehabilitation Act of 1973, as amended; or

(2) Requiring such employee to participate satisfactorily in a drug abuse assistance or rehabilitation program approved for such purposes by a Federal, State, or local health, law enforcement, or other appropriate agency;

(g) Making a good faith effort to continue to maintain a drug-free workplace through implementation of paragraphs (a), (b), (c), (d), (e) and (f).

The grantee may insert in the space provided below the site(s) for the performance of work done in connection with the specific grant:

Place of Performance (Street address, city, county, state, zip code)

Check if there are workplaces on file that are not identified here.

(Alternate II - Grantees Who Are Individuals)

(a) The grantee certifies that, as a condition of the grant, he or she will not engage in the unlawful manufacture, distribution, dispensing, possession, or use of a controlled substance in conducting any activity with the grant;

(b) If convicted of a criminal drug offense resulting from a violation occurring during the conduct of any grant activity, he or she will report the conviction, in writing within 10 calendar days of the conviction, to every grants officer or other designee, unless the Federal agency designates a central point for the receipt of such notices. When notice is made to such a central point, it shall include the identification number(s) of each affected grant.

B. Certifications Required for Contract Awards

1. FAR 52.203-11 Certification and Disclosure Regarding Payments to Influence Certain Federal Transactions (APR 1991)

The offeror, by signing its offer, hereby certifies to the best of his or her knowledge and belief that on or after December 23, 1989--

(1) No Federal appropriated funds have been paid or will be paid to any person for influencing or attempting to influence an officer or employee of any agency, a Member of Congress, an officer or employee of Congress, or an employee of a Member of Congress on his or her behalf in connection with the awarding of any Federal contract, the making of any Federal grant, the making of any Federal loan, the entering into of any cooperative agreement, and the extension, continuation, renewal, amendment, or modification of any Federal contract, grant, loan, or cooperative agreement;

(2) If any funds other than Federal appropriated funds (including profit or fee received under a covered Federal transaction) have been paid, or will be paid, to any person for influencing or attempting to influence an officer or employee of any agency, a Member of Congress, an officer or employee of Congress, or an employee of a Member of Congress on his or her behalf in connection with this solicitation, the offeror shall complete and submit, with its offer, OMB standard form LLL, Disclosure of Lobbying Activities, to the Contracting Officer; and

(3) He or she will include the language of this certification in all subcontract awards at any tier and require that all recipients of subcontract awards in excess of \$100,000 shall certify and disclose accordingly.

Submission of this certification and disclosure is a prerequisite for making or entering into this contract imposed by section 1352, title 31, United States Code. Any person who makes an expenditure prohibited under this provision or who fails to file or amend the disclosure form to be filed or amend by this provision, shall be subject to a civil penalty of not less than \$10,000, and not more than \$100,000, for each such failure.

2. FAR 52.209-5 Certification Regarding Debarment, Suspension, Proposed Debarment, and Other Responsibility Matters (JAN 2001)

(a)(1) The Offeror certifies, to the best of its knowledge and belief, that --

(i) The Offeror and/or any of its Principals--

(A) Are () are not (X) presently debarred, suspended, proposed for debarment, or declared ineligible for the award of contracts by any Federal agency;

(B) Have () have not (X), within a three-year period preceding this offer, been convicted of or had a civil judgment rendered against them for: commission of fraud or a criminal offense in connection with obtaining, attempting to obtain, or performing a public (Federal, state, or local) contract or subcontract; violation of Federal or state antitrust statutes relating to the submission of offers; or commission of embezzlement, theft, forgery, bribery, falsification or destruction of records, making false statements, tax evasion, or receiving stolen property; and

(C) Are () are not (X) presently indicted for, or otherwise criminally or civilly charged by a governmental entity with, commission of any of the offenses enumerated in subdivision (a)(1)(i)(B) of this provision.

(iii) The Offeror has () has not (X), within a three-year period preceding this offer, had one or more contracts terminated for default by any Federal agency.

(2) "Principals," for the purposes of this certification, means officers; directors; owners; partners; and, persons having primary management or supervisory responsibilities within a business entity (e.g., general manager; plan manager; head of a subsidiary, division, or business segment, and similar positions).

This Certification Concerns a Matter within the Jurisdiction of an Agency of the United States and the Making of a False, Fictitious, or Fraudulent Certification May Render the Maker Subject to Prosecution Under Section 1001, Title 18, United States Code.

(b) The Offeror shall provide immediate written notice to the Contracting Officer if, any anytime prior to contract award, the Offeror learns that its certification was erroneous when submitted or has become erroneous by reason of changed circumstances.

(c) A certification that any of the items in paragraph (a) of this provision exists will not necessarily result in withholding of an award under this solicitation. However, the certification will be considered in connection with a determination of the Offeror's responsibility. Failure of the Offeror to furnish a certification or provide such additional information as requested by the Contracting Officer may render the Offeror nonresponsible.

(d) Nothing contained in the foregoing shall be construed to require establishment of a system of records in order to render, in good faith, the certification required by paragraph (a) of this provision. The knowledge and information of an Offeror is not required to exceed that which is normally possessed by a prudent person in the ordinary course of business dealings.

(e) The certification in paragraph (a) of this provision is a material representation of fact upon which reliance was placed when making award. If it is later determined that the Offeror knowingly rendered an erroneous certification, in addition to other remedies available to the Government, the Contracting Officer may terminate the contract resulting from this solicitation for default.

APPENDIX A: LATE SUBMISSIONS AND WITHDRAWALS OF PROPOSALS

(a) Offerors are responsible for submitting electronic proposals and signed proposal cover pages so as to reach the Government office designated in this BAA by the time specified in this BAA.

(b) If the electronic proposal is received at the Government office designated in this BAA after the exact time and date specified for receipt of offers, it is "late" and will not be considered unless it was received at the initial point of entry to the Government infrastructure not later than 4:00 p.m. Eastern Daylight Savings Time one working day prior to the date specified for receipt of proposals. If the signed proposal cover page is received after the exact time and date specified in this BAA, it is "late" and will not be considered. Both the electronic proposal and signed cover page must be timely.

(c) Acceptable evidence to establish the time of receipt at the Government office includes, as applicable, documentary evidence of receipt maintained by the installation, the time/date stamp of that office on the document wrapper, or oral testimony or statements of Government personnel.

(d) If an emergency or unanticipated event interrupts normal Government processes so that proposals cannot be received at the office designated for receipt of proposals by the exact time specified in the solicitation, and urgent Government requirements preclude amendment of the solicitation closing date, the time specified for receipt of proposals will be deemed to be extended to the same time of day specified in the solicitation on the first work day on which normal Government processes resume.

(e) Proposals may be withdrawn by written notice received at any time before award. Withdrawals are effective upon receipt of notice by the Contracting Officer.